

CLAIMS

1 1. A system for processing usage data within a local data processing system installed on a
2 remote apparatus, wherein the local data processing system comprises:
3 a sensor for gathering usage data from the remote apparatus; and
4 a processor for processing the gathered usage data and calculating a charge based
5 on the gathered usage data.

1 2. The system of claim 1, further comprising a communications system for transmitting
2 the calculated charge to a central server via a wireless transmission channel.

1 3. The system of claim 2, further comprising a security system, wherein the security
2 system comprises a tamper resistant encasement that encases at least one component of
3 the local data processing system.

1 4. The system of claim 3, wherein the at least one encased component comprises the
2 processor.

1 5. The system of claim 3, wherein the at least one encased component comprises the
2 sensor.

1 6. The system of claim 3, wherein the tamper resistant encasement comprises an epoxy
2 having a signature embedded therein.

- 1 7. The system of claim 1, further comprising a security system, wherein the security
2 system comprises an encryption system for encrypting usage data transmitted between
3 the sensor and the processor.
- 1 8. The system of claim 2, further comprising a security system, wherein the security
2 system comprises an encryption system for encrypting data communicated by the
3 communications system.
- 1 9. The system of claim 1, wherein the processor comprises a cryptographic coprocessor.
- 1 10. The system of claim 1, wherein the charge comprises an insurance cost.
- 1 11. The system of claim 1, wherein the charge comprises a rental cost.
- 1 12. The system of claim 1, wherein the remote apparatus is selected from the group
2 consisting of: a vehicle, a boat, an aircraft, a heating system, a home appliance, a medical
3 device, a dwelling, a factory, a commercial establishment, and an insurable object.
- 1 13. The system of claim 1, wherein the sensor measures a speed of the apparatus.
- 1 14. The system of claim 1, wherein the sensor collects data from a GPS system.

- 1 15. The system of claim 1, wherein the sensor measures weight placed on the remote
- 2 apparatus.

1 16. A system for managing usage data collected on a remote apparatus, comprising:

2 a local data processing system having:

3 a monitoring system for gathering usage data from the remote apparatus;

4 a processor for processing the usage data;

5 a communications system for communicating the processed usage data;

6 and

7 a security system for securing the usage data.

1 17. The system of claim 16, wherein the security system includes a tamper resistant
2 encasement for securing the processor.

1 18. The system of claim 16, wherein the security system includes an encryption system
2 for encrypting usage data communicated from the monitoring system to the processor.

1 19. The system of claim 16, further comprising a central server for receiving the
2 processed usage data and securing a usage payment, wherein the usage payment is
3 determined from the processed usage data.

1 20. The system of claim 19, wherein the security system further comprises a second
2 encryption system for encrypting data transmitted between the communications system
3 and the central server.

1 21. The system of claim 20, wherein the usage payment comprises an insurance
2 payment.

1 22. The system of claim 20, wherein the usage payment comprises a rental payment.

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1 23. A system for managing usage information collected on a remote apparatus,
2 comprising:

3 a central server for receiving information from the remote apparatus, and
4 processing the information to obtain a usage payment; and

5 a local data processing system installed on the remote apparatus, having:

6 a monitoring system for gathering usage data from the remote apparatus;

7 a processor for managing the usage data;

8 a communications system for communicating information from the
9 processor to the central server; and

10 a security system, wherein the security system includes an encryption system for
11 securing information transmitted to the central server, and for securing information
12 processed by the central server.

1 24. The system of claim 23, wherein the usage payment comprises an insurance
2 payment.

1 25. The system of claim 23, wherein the usage payment comprises a rental payment.

1 26. A method of securely communicating data between remote apparatuses and a central
2 server, comprising the steps of:

3 generating data D on a first apparatus;

4 encrypting the data D with a first key K to generate $K(D)$;

5 transmitting $K(D)$ to a secure partner of the central server;

6 decrypting $K(D)$ at the secure partner to recover D;

7 appending a tag T to D and encrypting D and T with a second key k to generate

8 $k(D,T)$, wherein T associates data D with the first apparatus;

9 transmitting $k(D,T)$ to the central server;

10 decrypting $k(D,T)$ at the central server to recover D and T; and

11 processing data D at the central server.

1 27. The method of claim 26, further comprising:

2 generating a response A in response to the processing of D;

3 encrypting A and T with the second key k to generate $k(A,T)$;

4 transmitting $k(A,T)$ to the secure partner;

5 decrypting $k(A,T)$ at the secure partner to recover A and T;

6 encrypting A with first key K to generate $K(A)$;

7 transmitting $K(A)$ to the first apparatus; and

8 decrypting $K(A)$ at the first apparatus to recover response A.

1 28. The method of claim 26, wherein D comprises usage data monitored from apparatus

2 A.

1 29. The method of claim 28, wherein the central server calculates an insurance charge

2 based on data D.

1 30. The method of claim 28, wherein the central server calculates an insurance charge

2 based on data D.

1 31. The method of claim 26, wherein the first apparatus is selected from the group

2 consisting of: a vehicle, an aircraft, a boat, a medical device, a dwelling, a factory, a

3 commercial establishment, and an insurable object.

1 32. The method of claim 26, wherein D comprises a request for a rate quotation and A

2 comprises a rate.

1 33. A method for managing usage data collected on a remote apparatus, comprising:
2 providing a sensor on the remote apparatus to gather usage data;
3 communicating the usage data to a processor located on the remote apparatus;
4 calculating a charge on the processor based on the usage data; and
5 communicating the charge to a server via a wireless transmission channel.

1 34. The method of claim 33, further comprising:
2 obtaining an electronic payment based on the charge.

1 35. The method of claim 33, wherein the charge is an insurance cost.

1 36. The method of claim 33, wherein the charge is a rental cost.

1 37. The method of claim 33, wherein the usage data is encrypted prior to being
2 communicated to the processor.

1 38. The method of claim 33, wherein the charge is encrypted prior to being
2 communicated to the server.